

**WHAT IS CLAIMED IS:**

1. A composition comprising:
  - (a) at least one polar aprotic solvent (TPA)
  - (b) at least one ether (TE) selected from the group consisting of ethers,  
 5 ether-esters, and ether-ketones having:
    - a molar volume less than 200,
    - a molecule devoid of a hydroxyl function
  - (c) at least one activator (TA) comprising at least one reactive -NH<sub>2</sub> and/or  
 -NH- nitrogenous function, of molar volume less than 100.
- 10 wherein (a), (b), and (c) are present in proportions effective for cold preparation of laminated composite materials based on polyester resins in order to confer to them without preliminary sanding or abrasion a surface state suitable for adhesive bonding with a polyurethane adhesive.
- 15 2. The composition according to claim 1, wherein said molar volume is less than 160.
- 20 3. The composition according to claim 1, in which the polar aprotic solvent (TPA) is Dimethylsulfoxide (DMSO), Dimethylformamide (DMF), 1-methyl-2-pyrrolidinone (NMP), N-Methylmorpholine (NMm),  $\gamma$ -Butyrolactone (Blo), Acetonitrile (AcN), Ethylene carbonate or Propylene carbonate.
- 25 4. The composition according to claim 1, in which the ether (TE) is 1,4-Dioxane (Dx), Methyl-tert-butyl-ether (MTBE), Diethylether, Tert-amyl-methylether (TAME), 2-Methoxy-1,3-dioxolane, 1,3,5-Trioxane, Methyl methoxyacetate, Methyl-3-methoxy-propionate (MMP), Dipropyleneglycol dimethylether (DPGDME), Propyleneglycol methyl ether acetate (PGMA), Tetrahydrofuran (THF), Benzyl oxide (BO), Dibenzyl ether (DBE), 1,3-Dimethoxybenzene, 1,4-Dimethoxybenzene, 1,2,3-Trimethoxybenzene, 2-Methoxy-1,3-dioxolane, 1,3-Dioxolane, Anisole, 1,2-  
 30 Dimethoxybenzene, 2-Methoxy-3,4-Dihydropyran, 2,5-Dimethoxytetrahydrofuran, Ethyleneglycoldimethylether, 1-tert-butoxy-2-methoxyethane, 1,4-Dioxane or 1,3-Dioxane.

5. The composition according to claim 1, in which the activator (TA) is pyrrole, imidazole, pyrazole or 3-pyrroline.

6. The composition according to claim 1, wherein Total Polar Aprotic (TPA), Total Ether (TE) and Total Activator (TA) described by the coordinates:

$$TPA^* = [TPA / (TPA + TE + A)] \cdot 10^2$$

$$TE^* = [TE / (TPA + TE + A)] \cdot 10^2$$

$$TA^* = [TA / (TPA + TE + A)] \cdot 10^2$$

are linked to the ternary diagram by the relations:

$$10\% \leq TPA^* \leq 40\%$$

$$55\% \leq TE^* \leq 85\%$$

$$1\% \leq TA^* \leq 25\%$$

where the looping relation is applied to 100% of the composition  $TPA^* + TE^* + A^* = 100$ , all the amounts TPA, TE, A being expressed by volume, the amounts  $TPA^*$ ,  $TE^*$  and A appearing as volume percentages.

7. The composition according to claim 1, in which the polar aprotic solvent (TPA) is a mixture of Dimethylsulfoxide (DMSO) and Dimethylformamide (DMF) in a voluminal ratio ranging between 40/60 and 60/40.

8. The composition according to claim 7, wherein said voluminal ratio of said mixture is equal to 50/50.

9. The composition according to claim 1, in which the ether (TE) is an ether having a flash point greater than 100 °C.

10. The composition according to claim 9, wherein the ether (TE) is benzyl oxide (BO) or Dibenzyl ether.

11. The composition according to claim 1, in which the ether (TE) comprises one or more methoxy groups.

12. A laminate composite comprising:

(a) two or more polyester-based resin layers; each of said layers including at least one surface which is adhesively bound to a surface of another layer, wherein said surface is not sanded or abraded;

(b) a polyurethane adhesive between the surfaces of said layers which are adhesively bound,

wherein said surfaces of said layers which are adhesively bound are pre-treated with the composition according to claim 1 prior to application of the adhesive.

13. A process for preparation of the composition according to claim 1, comprising simple mixing of components (a)-(c).

14. A process for cold preparation of surfaces of materials for adhesive bonding, used to form a laminated composite, comprising treating the surfaces of said materials with the composition according to claim 1.

15. The process according to claim 14, wherein said composite materials are SMC (Sheet Molding Compounds), BMC (Bulk Molding Compounds), RTM (Resin Transfer Molding), AMC (Adapted Molding Compound), or RIM (Resin Injection Molding) materials.

16. The process according to claim 14, wherein said composite materials are laminated materials of the GRP (Glass Reinforced Plastic) or FRP (Fiber Reinforced Polymers) type based on a resin of unsaturated polyesters.

17. The process according to claim 14, comprising treating the surface to be adhesively bonded at a temperature between 5 and 50°C.

18. The process according to claim 17, comprising treating the surface at a temperature between 15 and 30 °C.

19. The process according to claim 14, further comprising applying an adhesive less than 60 minutes after treating the surfaces of said materials with the

composition according to the invention without previous drying of the treated surfaces.

20. The process according to claim 14, comprising treating the surfaces of  
5 said materials by immersion, spraying, or coating with a brush, a rag or a sponge.

21. The process according to claim 14, comprising treating the surfaces of the materials before adhesive bonding or assembling with a polyurethane adhesive.

10            22.    The process according to claim 21, wherein the polyurethane adhesive is of the mono-component (PU1K or HMPUR) or bi-component (PU2K) type.

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